

Effect of body build on weight-training-induced adaptations in body composition and muscular strength.

Physical Fitness and Performance

Medicine & Science in Sports & Exercise. 26(4):515, April 1994.

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Abstract:

The aim of the present study was to investigate whether weight-training-induced adaptations in body composition and isokinetic strength differ as a function of body build. Body build of a subject was characterized as the extent to which a person's fat-free mass index (FFMI = fat-free mass-height⁻²; kg-m⁻²) differs from the regression of FFMI over fat mass index (FMI = fat mass-height⁻²; kg-m⁻²) as derived from a sedentary male population (N = 77). From this population two groups with either a slender (N = 10) or a solid (N = 11) body build were selected. For 12 wk the subjects performed a weight-training program twice a week. Training induced a significant (P < 0.05) increase in fat-free mass (FFM) in the solid group (1.6 kg, 2.3%) in contrast with the slender group, which showed no significant change in FFM. Both groups showed comparable decreases in fat mass (FM; slender: -1.7 kg, -10.8% versus solid: -2.4 kg, -11.3%) and increases in strength (on average 13.8%). In conclusion, the increase in FFM due to a weight-training program is modified by body build. This modification, however, is restricted to a larger increase in the solidly built group.

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